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ABSTRACT

An outline for librarians who want to cooperatively plan to implement a shared circulation system, this guide employs a method of planning based on policy analysis. The stages of problem formulation, identification of objectives, perceptual activity, system design, information gathering, and evaluation are outlined. Although this guide contains some examples of the types of information decision makers should consider, it does not provide detailed information about every aspect of the planning process. (FM)

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A PLANNING PROCESS FOR AUTOMATED SHARED CIRCULATION SYSTEMS

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INTRODUCTION

As the State Library of Ohio, Library Development Division's Consultant for Systems and Network Development, I have received many questions about planning for the automation of library circulation. In response to these concerns, I have formulated this guide as a useful checklist for librarians who want to cooperatively plan to implement a shared circulation system. This same outline also may be applied to the individual library seeting.

A PLANNING PROCESS FOR AUTOMATED SHARED CIRCULATION SYSTEMS employs a method of planning based on policy analysis. Policy analysis is an approach to planning that helps decision makers choose a course of action and implement that choice. It does this by investigating decision problems, searching out objectives and alternatives, and comparing objectives and alternatives in light of their consequences by using a model to bring the decision maker's judgement and intuition to bear on the problems.

Although this guide contains some examples of the types of information decision makers should consider, this checklist does not contain detailed information about every aspect of the planning process. I am available to assist Ohio libraries with their plans and work with directors and staffs in developing regional networks.

Tony Yankus
Network Consultant
May, 1980

A PLANNING PROCESS FOR AUTOMATED SHARED CIRCULATION SYSTEMS

STEP ONE PREPARING FOR A REQUEST FOR PROPOSAL (RFP)

PROBLEM FORMULATION

#1. Determine the issues.

(a) Describe the present circulation system of each library that might participate in the automated system.

This description might include:

a flow chart of procedures and processes involved in charging and discharging library materials;
users records;
catalog(s) and records for books, films, phonorecordings, magazines, tapes, vertical files and other materials circulated by the libraries;
reserve book system;
film booking procedures and policies;
overdues, fines and collections;
acquisition system, files and trends;
personnel functions and workloads;
bibliographic controls;
circulation records;
statistical records;
special collections and services...

(b) Identify service problems inherent to the systems.

Some problems might be:

staff time spent on clerical duties;
costs of processing overdues;
increases in circulation (forecasts);
difficulties in providing for reciprocal borrowing;
resource-sharing difficulties;
inadequate bibliographic control of materials;
cataloging and processing costs;
other practices that impede or inhibit services rendered by staff to users.

(c) Formulate a list of service goals common to to the cluster of libraries by:

(i) Examining the history of interlibrary cooperation among the participating libraries.

(ii) Examining the current status of interlibrary cooperation among the participating libraries. Identify needs and service problems. For example, union catalog maintenance costs, problems with reciprocal borrowing, interlibrary loan costs.

(iii) Forecasting future needs and service demands for interlibrary cooperation among participating libraries. For example, shared acquisition, delivery systems, growth of interlibrary loans, increased costs of materials, and so on.

(d) Identify alternatives that might improve services and assist libraries in attaining local objectives and the common goals.

Alternatives may be:

listing available automated library circulation systems available from vendors;
developing an in-house system rather than one commercially produced;
modifying the existing circulation system to improve service and increase efficiency;
examining automtated library information networks as sources of contractural services.

(e) Examine the practical considerations associated with implementing each of the alternatives. These include initial and long-term costs, physical plant requirements, and personnel considerations. Develop a five-year plan for financing, providing system enhancement and expansion.

Basic finaocial considerations for automated systems include:

Hardware:	the central processing unit, terminals, printers, and so on.
Supplies:	labels, computer paper, printer ribbons and fonts, and others.
Site preparation:	telephone lines, electrical outlets, environmental control requirements.
Conversion:	supplies plus personnel; magnetic tape, punched card, or other "borrowed" means of converting the libraries' records to machine-readable form.
Staff:	Training time, job specification changes.
Telecommunications:	telephone line charges from a local, regional or distant computer to each local terminal.
Maintenance:	hardware repair or replacement.
System Expansion:	upgrading the system's capacity to meet new or increased demands of collection growth, increased circulation and additional library facilities and services.

(f) Coordinate your system planning with what's happening around you. Are the alternative automated systems able to interface (interact) with existing systems in the region and the State? Ask your regional library system, the State Library and regional planning commissions for assistance.

#2. Conceptualize a system.

(a) Summarize the problems identified in [#1(b)].

(b) Determine system boundaries.

(i) Define the scope of the system. Decide what problems you have listed will be solved in a cost-effective manner by implementing an automated system. For example, interlibrary loan, acquisitions, shared-cataloging, and so on.

(ii) Examine the hypothetical system's impact on other library administrative functions outside the scope of the system. Some examples include the budgets of the participating libraries, staffing patterns and requirements, local libraries' hours of operation, and so on.

IDENTIFICATION & CLARIFICATION OF OBJECTIVES

Write specific objectives (what is to be accomplished, in measurable terms, and when) to solve the problems based on the goals established for the automated system in [Problem Formulation, #1(c)].

PERCEPTUAL ACTIVITY

The planning process is not necessarily sequential. The activities described in Step One are often accomplished simultaneously with those of Step Two, Three and Four. Planning is a dynamic, interactive process. It is not as important to accomplish each of these activities in the sequence described, as it is to "go back" and look at what you, the planner are doing. For example, at this point, or any other during this process, go back and examine how the issue has been defined, problems identified, and objectives formulated. Are you working toward solving the correct problem? Does the evidence gathered support your hypothetical solution? Do you have a viable proposal for a system?

STEP TWO SYSTEM DESIGN

Draw a blueprint and develop a program for the system required to meet the libraries' common objectives.

#1. Describe software functions. These are the general functions and instructions to be performed by the computer programs.

Some basic functions of an automated library circulation system include:

- Charging and renewing materials
- Reserving materials for users
- Discharging (checking-in) materials
- Reporting/restricting delinquent borrowers
- Recording fines and fine payments
- Identifying patrons and titles
- Producing reports and notices.

#2. Describe functional specifications. Detail the functions described in (#1) above and include performance requirements.

Some functional specifications for the "discharge" or "check-in" function of an automated library circulation system might include:

- The system must allow materials to be checked-in by an item identification number.
- When the item is not overdue, the circulation system should erase the connection between the user and the item.
- When checked-in the item must immediately revert to "in the library" status.
- When an item being "checked-in" is identified as overdue, the system must provide two types of check-in.

  (a) no fines record (the patron pays for the overdue item)

  (b) fine recorded automatically (the item, dates due and returned and amount must all automatically be recorded on the patron's record).

- If the item is reserved for another user, the system must provide an "on hold" signal; the item must then be automatically checked out to the reserve shelf and a notice to the user generated automatically. The reserve queue must also be automatically adjusted to delete the user who receives the reserve notice and advance the other users in the reserve queue.
- If an item is returned to a branch or agency in the library system that belongs to another facility, the circulation system must automatically check the item in from the patron and check it out to the non-owning agency which discharged it.

#3. Include automated circulation system performance requirements.

Examples of performance requirements for the discharge specifications above might include:

- Response time: Under 7 seconds, 90 percent fractile; average 4 4 seconds; maximum 7 seconds.
- Multi-branch environment with at least seven libraries on-line to the system.
- If the item is not checked in at the owning branch or agency within five days, following check-in at a non-owning branch or agency, the branch or agency which orginally checked it in must be notified automatically.

#4. Include numbers describing patron and material files.

For example, the system design might include minimum specifications for:

A title file of 350,000 items.
A copy file of 932,000 items.
A patron file of 150,000 records.

#5. Include hardward specifications, based on the number and size of the files, service locations and number of transactions at each location, and so on.

An example of a system's hardware configuration might look like:

One central processing unit to include:

two high-speed printers, disc control equipment, two disc drives (600 k bytes online storage), twelve disc packs.

Terminals:
four local display terminals for the main library;
ten remote display terminals for six branch libraries;
two portable terminals for two bookmobiles.

STEP THREE GATHER INFORMATION

REQUEST FOR PROPOSAL (RFP)

#1. Learn more about the alternatives you identified in [step one, problem formulation, #1(d)] by requesting information, sending questionnaires, visiting libraries using on-line services of vendors and attending demonstrations of systems.

#2. Survey vendors, information processing services, and/or existing networks based on the checklist of specifications in your system model designed in step two.

STEP FOUR EVALUATION

COMPARISONS

#1. Examine the data collected from your RFP's. Look at the implications of the various alternatives. How well does each system fulfill the needs of your system model?

#2. Examine the short and long range costs of each alternative. Will the participating libraires be able fund operations of the system?